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AUTHOR Dromi, Esther; Beny-Noked, Sara
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ABSTRACT

The study compared conversations of mothers with language impaired children--LIC--(4-6 years old) to conversations of mothers with linguistic achieving children. The experimental group consisted of 8 mother-child dyads, and 2 control groups consisted of 16 dyads, matched to chronological and linguistic age. Each dyad was recorded in two versions of a storytelling task and a task of playing with toys. Analysis revealed that conversations of mothers and LIC in the storytelling condition were the shortest, included the highest proportion of mothers' monologues, and were imbalanced with mothers showing the dominant pattern. In the playing condition, the results were markedly different. In six variables (compared with only one in storytelling), the experimental Ss manifested similar behaviors to both control groups. It was suggested that mothers should be instructed in therapy to use the context of storytelling for developing interactive conversations. (CL)

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Esther Dromi and Sara Beny-Noked
School of Education, Tel Aviv University

TOPIC INITIATION AND SUSTAINING IN CONVERSATIONS OF LANGUAGE IMPAIRED CHILDREN WITH THEIR MOTHERS

Paper presented at the Ninth Boston University Conference on Language Development, October 1984.

Address for correspondence:

Dr. Esther Dromi
School of Education
Tel Aviv University
Ramat Aviv, Israel 69978.

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INTRODUCTION

The analysis of the language input to Language Impaired Children (LIC) has implications for both basic research and clinical methods. LIC show significant deficits in their linguistic functioning while exhibiting age appropriate non-verbal intelligence, normal hearing, and an unmarked medical or developmental history (Leonard, Kail & Hale, 1984). Therefore, they in fact constitute a "controlled by nature" group of subjects for testing hypotheses about the structure and function of "motherese" for language acquisition. Thus, a claim that the linguistic simplifications in this register are related to the child's linguistic abilities (e.g. Snow, 1977; Cross, 1978), or the proposal that early parent-child verbal interactions facilitate the language acquisition process (e.g. Snow, 1979, Cross, 1978), are only two examples of the type of questions that can be tested by comparing the interactions of mothers with LIC or with language achieving children.

From a clinical point of view, it is important to examine the linguistic environment of LIC since it may include patterns which may not facilitate language growth. If the linguistic interaction of mothers with their LIC show disordered patterns, these patterns may contribute to the maintenance of the linguistic disability (Schrodof & Edwards, 1983). Descriptive evidence on the contributing factors to the problem can therefore help in identifying specific goals for intervention, which sometimes will incorporate the modification of parent's verbal interactions with their children (e.g. Allen & Lasky, 1977; Clezy, 1979).

The number of published studies on "motherese" in the area of language impairment has been surprisingly limited and somewhat controversial (e.g. Fey & Leonard, 1983). Some studies have shown that parents of LIC apply unique strategies of communication with their children. It has been

noted that mothers of LIC who rarely elaborate comments provided by their child (Millet & Newhoff, 1978), are very directive (Bondurant, 1977; Schrodof & Edwards, 1983), and produce short and frequently ungrammatical sentences of limited vocabulary. Contrary to these claims, Lasky & Klopp (1982) and Conti-Ramsden & Friel-Patti (1983), in two recent studies, have reported that mothers' input to LIC is regular in terms of the range of speech-acts used, the number of turns in a conversation, and the length of each utterance as measured by MLU.

We can suggest three explanations for the discrepancy found:

a. The clinical populations studied by the different researchers were very hetereogeneous. While some investigators selected their subjects very carefully, others applied less stringent criteria in identifying their samples. In some studies even children with cognitive, social, and medical problems were included in the LI sample;

b. While in some studies comparisons were drawn on the basis of age, in others researchers have compared the input to LIC to input to normal children at the same linguistic age;

c. In the different studies diverse variables have been measured and it is possible that some may have been affected while others were not. Thus, in some studies, the morphosyntactic structure of the input was tested, in others semantic related issues have been discussed, and more recently the focus of interest has been pragmatic - mainly speech-act analysis.

Our study attempted a more integrated approach in the discourse analysis of conversations. While in previous studies the input to the child was the target of investigation, here we looked at conversations in

terms of their **overall structural properties.** We compared conversations of mothers with LIC, to conversations of mothers with linguistic achieving children recorded in similar elicitation conditions.

METHOD

Twenty-four mother-child dyads participated in the study, forming one experimental group and two control groups. The experimental group consisted of eight dyads, and each experimental dyad was pair-matched with two control dyads. Our LIC, between the ages of 4 years 9 months and 6 years, were all identified in speech and hearing clinics where they were enrolled in language intervention programs. All of them have manifested significant delays in production of at least a year and a half. Their mean linguistic age in production as measured by their mean utterance length in morphems (MPU) was 3.6 (Dromi & Berman 1982). As it turned out the subjects selected for the study came from lower-middle class families of Israeli born parents, and mothers with no more than high-school education. The two control groups consisted of 16 mother-child dyads, with one group matched according to linguistic age, and the other according to chronological age. Subjects were also pair-matched on the basis of family income and mother's level of education. For all subjects Hebrew was the only language spoken at home. The ages of the children in the age matched group ranged from 4 years and 8 months to 6 years and a half (mean 5:5), with a mean MPU score of 5.42. The ages of the children in the language matched group ranged from 3 years to 4 years and 4 months (mean 3:7) with a mean MPU score of 3.50.

ELICITATION CONDITIONS

Each dyad was recorded in two versions of a story telling task and a

task of playing with toys.

The recording of each dyad in three conditions provided a total of 72 conversations which were transcribed with detailed contextual notation. In this presentation I will refer to a subset of this sample, that is, the 48 conversations that were recorded during one story-telling task and while playing with toys.

THE SYSTEM OF ANALYSIS

Our system of analysis has evolved from recent work in the area of discourse structure. In particular, we were influenced by Reinhart's (1981) characterization of the notion of sentence topic. Her model makes use of the concept of "pragmatic aboutness", viewing topics as organizers of information. Recently, Foster & Subsay (in press) have argued that Reinhart's analysis of the status, definition, and function of sentence topic can be extended to discourse topics as well. They claimed that each utterance in a conversation is linearly related to previous and subsequent utterances, but is also embedded under a more global proposition which constitutes a discourse topic. Each conversation can be represented in a top-down fashion where the most parsimonious summary is located at the top, and other topics discussed diverge from it as the nodes of a tree.

In our analysis we divided each conversation into discourse units (DU). Figure 1 (in the handouts) is an example of an analyzed story. After dividing each conversation into its DUs we further distinguished between three qualitative types of units. The definitions of types are listed in your handouts.

DU Type A: This unit is characterized by being **non-interactive.** The topic is introduced by one speaker and is not kept up by the second participant. Linguistic or non-linguistic acknowledgement is recorded only in some

instances.
A1: mother's monologue; A2: child's monologue; A3: monologue and acknowledgement.

DU Type B: This unit shows an emergent dialogue structure (Foster 1981). Each unit consists of one initiation, one response and at least one feedback move, showing that the two participants are co-operatively discussing the same topic.

DU Type C: This unit is characterized by its **interactive and elaborated** structure. Assigned to this category are discourse stretches which consist of two or more turns of each speaker.

10% of our sample was scored by two independent judges with interjudge reliability of 92%.

RESULTS

Tables 1 and 2 (in your handouts), summarize the findings for the experimental, and the two control groups. For each variable we have presented mean scores of the group, standard deviations, and F values of the analysis of variance. Only three out of all the variables measured in the two conditions showed differences that were statistically significant at the p=.05 level or below. Two factors explain this finding:

a) the variability of scores within each group was high, especially in the LI group and

b) our groups were relatively small for statistical analysis, and therefore even though some quantitative differences did exist they could not achieve statistical significance.

A close examination of the raw scores, however, reveals that the comparison yielded interesting results. While in some variables mothers and LIC scored similarly to mothers and younger normal speakers, in other aspects the scores were more like the conversations of mothers with children of the same chronological age. Several distinct patterns unique to

the linguistic interaction of mothers with LIC were also found. In the right most column of tables 1 and 2, we marked variables which showed distinct behaviors, and the ones which were similar to one control group or both. Since a clear effect of condition on the conversational patterns was found, I will discuss the results of story telling first, and then will compare them with the results of playing.

In the story telling condition, the experimental dyads behaved similarly to the control subjects, matched by linguistic age, in terms of the following features: the number of topics discussed, the relative frequency of monologue type A3, and mothers' MPU. On the other hand similarity to age-mate dyads was found for the relative length of a discourse unit, the frequency of child monologues, the breakdown between DU's types A and C, and the number of topic initiations by the child. It is important to note, however, that in all of these variables the language matched subjects obtained higher scores than the other two groups, a finding which was not predicted by us.

Conversations of mothers and LIC showed a number of distinct characteristics: they were the shortest, they included the highest proportion of mothers' monologues, and they also were imbalanced with mothers showing the dominant pattern, which was reflected by a relatively low number of turns, each being very long. LIC's MPU scores in the story condition were the lowest, and were lower than the scores that were calculated for the same subjects in spontaneous speech samples.

The overall picture obtained in the playing condition was remarkably different. The direction of change was positive in all cases. In six variables (compared with only one in story telling) the experimental subjects manifested similar behaviors to both groups. When mothers and language impaired children communicated similarly to only one of the

control groups, it was the group which exhibited the more interactive and elaborated patterns of conversation. The number of distinct features in this condition was small. Mothers' and LIC's scores on the length of conversations and the length of each DU were the highest. Mothers' and children's monologues in the LI group showed neither the lowest nor the heighest frequency of occurrence.

During playing, mothers' monologues were not so prevalent as they were in story-telling, although the conversations in general lasted much longer. During playing there was observed an increase in the child's monologues, relatively more conversational turns were noted, and a better ratio between the MPU scores of mother and child was established. The MPU scores during playing were very close to that of the language matched subjects. These scores were lower here than they were in the story condition for all subjects.

There are a number of clinical implications to these findings. Our results indicate that clinicians should pay attention to the story telling routines of mothers of LIC. It seems that when presented with pictures, mothers tend to exhibit dominant patterns of interaction which are characterized by a low degree of co-operation, and relatively high level of talkativeness. While conversations of LIC showed little elaboration by two participants, mothers and language matched subjects quite often engaged in free discussions. Such an interactive behavior, however, was not frequently noted for the mothers and chronologically matched subjects, since their mothers simply let their children do all the talking. We suggest that during therapy mothers should be instructed how to use the context of story telling for developing interactive conversations. More specific goals for training of the mothers could be to increase the number

of turns, to shorten each turn, to develop topics initiated by the child, and to encourage the child to contribute to the topic suggested by the mother.

The finding that conversations between mothers and LIC were much more interactive, and better balanced during playing with objects is encouraging. It shows that the linguistic environment of LIC is not always disordered. Since mothers and LIC do sometimes experience regular interactions, there is a hope that their conversational patterns can be modified. We propose that parents be advised to increase the frequency of playing. We hypothesize that in a less tutorial situation, LIC will contribute more to the initiation and maintenance of discourse topics.

How, and to what extent the underlying structure of conversations can be improved by transfer from one context to another still remains an open question which future studies will explore.

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Esther Dromi & Sara Beny-Noked
School of Education
Tel-Aviv University,
Israel 69978

Topic Initiation and Sustaining in Conversations of Language Impaired Children with their Mothers.

1. Types of Discourse Units:

   A. This unit is characterized by being **non-interactive.** The topic is introduced by one speaker and is not kept up by the second participant. Linguistic or non-linguistic acknowledgement is recorded only in some instances.

      A1: mother's monologue; A2: child's monologue; A3: monologue and acknowldgement.

   B. This unit is characterized by its emergent dialogue structure (Foster, 1981). Each unit consists of one initiation, one response and at least one feedback move, showing that the two participants are **cooperatively** discussing the same topic.

   C. This unit is characterized by its **interactive and elaborated** structure. Assigned to this category are discourse stretches which consist of two or more turns of each speaker.

2.

FIGURE 1

PICKING FLOWERS FOR MOTHER

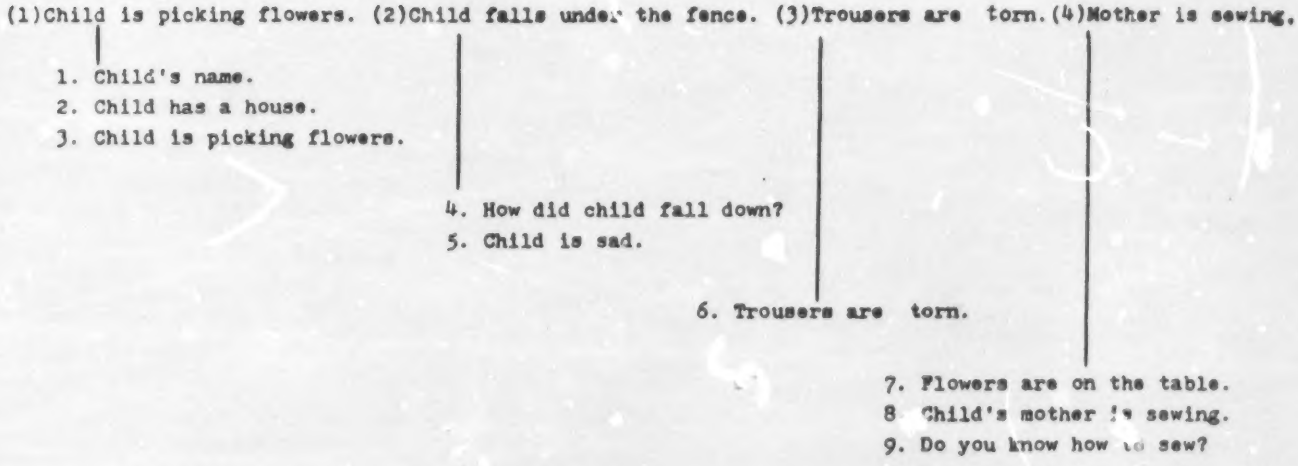
(1)Child is picking flowers.
(2)Child falls under the fence.
(3)Trousers are torn.
(4)Mother is sewing.
1. Child's name.
2. Child has a house.
3. Child is picking flowers.
4. How did child fall down?
5. Child is sad.
6. Trousers are torn.
7. Flowers are on the table.
8 Child's mother is sewing.
9. Do you know how to sew?

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Table 1: MEAN SCORES OF EXPERIMENTAL AND CONTROL GROUPS IN STORY TELLING CONDITION.

GROUP / VARIABLE	LANGUAGE IMPAIRED		LANGUAGE MATCHED		AGE MATCHED		F PROB.	SIMILARITY
	Mean	S.D.	Mean	S.D.	Mean	S.D.		
LENGTH OF CONVERSATION (1)	30.6	22.4	40.0	17.6	36.6	21.9	.66	X
No. of DU	= 8.0	3.6	= 8.2	2.4	10.2	2.5	.25	=
MEAN LENGTH OF DU (1)	= 3.7	1.6	4.8	1.4	= 3.5	1.6	.19	=
DU TYPE A (%)	= 66.7	30.2	43.4	28.6	= 66.2	29.1	.21	=
A1(%)	76.1	26.7	67.0	39.1	54.9	34.8	.47	X
A2(%)	= 7.8	15.8	10.2	16.1	= 7.8	14.8	.93	=
A3(%)	= 16.1	20.0	= 10.3	16.1	37.2	23.2	.03*	=
DU TYPE B (%)	20.4	20.7	20.3	14.8	19.4	15.9	.99	!
DU TYPE C (%)	= 12.8	16.2	36.2	22.4	= 14.4	16.5	.03*	=
MOTHER'S TURNS	6.5	6.4	11.1	5.3	10.4	7.5	.37	X
MEAN LENGTH OF MOTHER'S TURN (1)	4.3	1.9	2.8	1.2	2.8	1.2	.09	X
MOTHER'S MPU (2)	= 5.3	1.2	= 5.4	0.8	6.1	1.9	.51	=
CHILD'S TOPIC INITIATION(%)	= 13.3	16.7	16.2	11.1	= 12.6	14.3	.90	=
CHILD'S MPU (2)	2.8	1.1	3.1	0.8	4.2	1.8	.08	X

DU - Discourse Units
1 - Calculated in utterances
2 - Calculated in morphems. MPU- Morphems Per Utterance
X - LI distinct
= - LI similar to one control group
! - LI similar to both control groups
* - Significant differences at $p<.05$

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Table 2: MEAN SCORES OF EXPERIMENTAL AND CONTROL GROUPS IN PLAYING CONDITION.

GROUP / VARIABLE	LANGUAGE IMPAIRED		LANGUAGE MATCHED		AGE MATCHED		F PROB.	SIMILARITY
	Mean	S.D.	Mean	S.D.	Mean	S.D.		
LENGTH OF CONVERSATION (1)	146.6	53.5	108.1	42.2	105.9	28.5	.10	X
No. of DU	20.5	4.6	20.6	6.2	20.1	2.6	.97	!
MEAN LENGTH OF DU (1)	7.1	1.4	5.1	0.7	5.2	1.2	.002*	X
DU TYPE A (%)	= 36.0	17.0	= 37.5	12.8	44.0	16.6	.48	=
A1(%)	44.2	28.5	35.0	25.9	55.9	33.1	.38	X
A2(%)	21.4	20.9	33.7	27.4	14.3	26.7	.31	X
A3(%)	= 34.4	23.1	= 31.2	13.7	26.3	20.0	.70	=
DU TYPE B (%)	26.3	15.4	28.4	11.2	24.1	9.0	.78	!
DU TYPE C (%)	37.6	15.3	36.1	13.0	31.9	13.8	.70	!
MOTHER'S TURNS	40.25	15.4	31.5	12.4	29.5	8.8	.21	!
MEAN LENGTH OF MOTHER'S TURN (1)	2.3	0.7	2.1	0.7	2.4	0.9	.72	!
MOTHER'S MPU (2)	4.7	1.5	4.7	1.9	4.9	0.7	.97	!
CHILD'S TOPIC INITIATION(%)	= 41.1	24.5	= 40.7	27.8	30.1	28.2	.65	=
CHILD'S MPU (2)	= 2.5	0.9	= 2.6	0.7	3.8	1.9	.12	=

DU - Discourse Units
1 - Calculated in utterances
2 - Calculated in morphems. MPU- Morphems Per Utterance
X - LI distinct
= - LI similar to one control group
! - LI similar to both control groups

* - Significant differences at $p<.05$

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